

AMENDMENTS TO THE SPECIFICATION

Please replace paragraphs **[0035]** and **[0036]** on pages 12 and 13 of the specification with the following new paragraphs with the changes shown:

[0035] Figure 2 in an exemplary fashion illustrates six different embodiments of joining elements, namely joining elements 20a,b,c,d,e. The individual embodiments are suitable for different applications and materials. Naturally, the joining element design can differ substantially from the forms illustrated here. In order to take into account the differing materials and fields of application, the various joining elements are purposefully adapted. The joining elements depicted here as a rule during the processing are held and controlled at one end 21 in a holder (not illustrated in more detail). The optimum joining element material composition varies from application to application and is therefore adapted. In order to influence the mechanical damping, the joining elements 20a,b,c,d,e contain additional materials, such as, e.g., lime powder or reinforcing fibers. ~~These in part additionally~~

[0036] These, in part, additionally have a positive effect during processing, so that higher loads or more slender and longer joining elements can be implemented. The design of the ends 22a,b,c,d,e is important for the characteristics of the joining elements 20a,b,c,d,e and it also determines the subsequent material distribution in the base material. These designs therefore are in particular matched to the base materials. Flatter designs of the ends 22a,d (refer to Figs. 2a and 2d) have a greater

tendency to push material in front of them and thus to form a strongly compressed zone in front of the joining element elements 20a,d. This, for its part, supports a lateral distribution of the melted material. Sharp edges 23b,d and points 24b,c,e enhance the cutting effect of the joining elements 20b,c,d,e during the penetration of the covering layer 4 of a base material 10 (refer to Figure 1). Apart from this, the shape of the joining elements also has an influence on the melting characteristics of the joining elements 20a,b,c,d,e. Elements providing a direction for the energy, here in the shape of ribs 25, 27 running parallel to the longitudinal axis of the joining element 20c,d,e, in the case of a mechanical excitation, e.g., by means of ultrasound, lead to concentrations, which promote a local melting down. Through local material concentrations, e.g., through enlargements 26, the oscillation characteristics of the joining element 20 are influenced. In this sense it is also possible to implement the mass concentrations inside the joining elements 20a,b,c,d,e.